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**Charge Neutralized Low Energy Beam Transport at Brookhaven 200 MeV Linac**

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Space charge effects are most severe at low energy. The H<sup>-</sup> magnetron source proved about 100 mA H<sup>-</sup> beam to be match into the radio-frequency quadrupole accelerator. During the 450 microsecond long pulses, capturing the positive ion from residual gas ionization beam gets neutralizes. The neutralization time for the critical density depends upon the background gas and its pressure. Critical density for Xenon gas at 35 keV is about 43 times smaller than of Hydrogen and stripping cross section is only 5 times than of Hydrogen gas. We are using Xenon gases to reduce neutralization time and to improve transmission through the 200 MeV Linac. We have tried few other gases and We are also using pulse nitrogen gas to improve transmission and stability of polarized H<sup>-</sup> beam from OPPIS.